

September 28, 1993

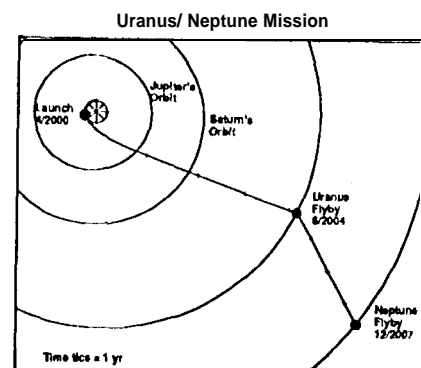
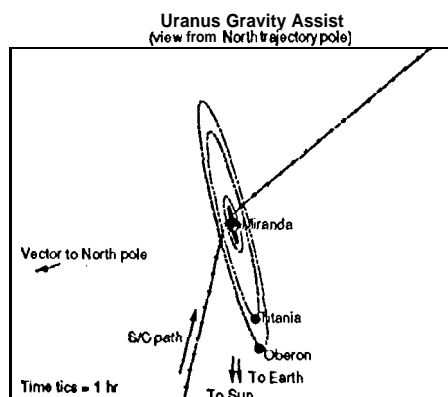
Abstract for IAA International Conference on Low-Cost Planetary Missions
Conference on Small Satellites

Working Title: Follow-On Missions for the Pluto Spacecraft
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The Pluto Fast Flyby mission development baseline consists of 2 identical spacecraft (120 -165 kg) to be launched to Pluto/ Charon in the late 1990s¹. These spacecraft are intended to fly by Pluto and Charon in order to perform various remote-sensing scientific investigations and have a mission development cost < \$400M (FY92\$) though launch+ 30 days. The long-life (6 - 10 years) mission duration and lightweight design make the Pluto spacecraft a good candidate for a number of other flyby missions to objects in the outer Solar System, and some of these were investigated by the Jet Propulsion Laboratory in co-operation with NASA Code SL'S (Solar System Exploration) Outer Planets Science Working Group (OPSWG) in 1993. The JPL team looked at what it would mean to fly one of these missions (if a third spacecraft were available) in terms of flight time, spacecraft modifications, and science payload resources; the OPSWG recommended science investigation modifications for the different targets based on the available resources. The missions could, in many cases, utilize less capable launch vehicles, thereby reducing the life-cycle cost of the missions. Examples of the sort of targets which were investigated and looked attractive in terms of flight time are:

- Uranus
- Neptune
- Uranus/ Neptune dual-mission²
- Trojan asteroids (624 Hektor, 617 Patroclus, others)
- 5145 Pholus (the reddest object known in the solar system)
- Kuiper Belt objects (i. e., 1992 QB1)

This paper will present the results of this investigation in terms of potential science return, performance, and the potential for life-cycle cost reductions through inheritance from Pluto Fast Flyby.



¹ Staehle, Robert L., et. al., "Exploration of Pluto: Search for Applicable Satellite Technology," Sixth Annual AIAA/ Utah State University Conference on Small Satellites, September 21-24, 1992.

² Patel, Moonish, personal communications, summer 1993.